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From four to nine styles: An update on individual differences in humor

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From four to nine styles: An update on individual differences in humor

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Abstract

Investigating individual differences in humor has become a popular topic for personality research. Three approaches to humor-related styles were proposed in the literature, namely Craik et al.'s (1996) five bipolar styles of humorous conduct, Martin et al.'s (2003) four humor styles, and Ruch et al.'s (2018) eight comic styles. The present study aims to determine how many styles can be empirically distinguished by comparing the Humor Styles Questionnaire (Martin et al., 2003) and the Comic Style Markers (Ruch et al., 2018) in a sample of 570 German-speaking adults. The findings showed redundancies among three scales, namely the affiliative, self-enhancing, and aggressive humor styles and the comic styles fun, benevolent humor, and sarcasm. One humor style (self-defeating) and five comic styles (nonsense, wit, irony, satire, and cynicism) were distinguishable between the two measures. Thus, these findings suggest that at least nine styles should be distinguished. Eventually, developing a comprehensive model and valid measures of individual differences in humor in cumulative research programs is needed to understand how humor unfolds in our everyday lives and how it can be applied effectively in interventions.

Keywords: *humor styles; comic styles; individual differences; personality; measurement; validity*

1 Introduction

Individual differences in humor have recently become a popular topic in personality research, in which humor-related “styles” denote the different forms of humor that people can engage in. Craik, Lampert, and Nelson (1996) were the first to employ this terminology by describing five bipolar styles of everyday humorous conduct derived from 100 non-redundant statements. In 2003, Martin, Puhlik-Doris, Larsen, Gray, and Weir introduced four humor styles as well-being related functions of humor. Recently, Ruch, Heintz, Platt, Wagner, and Proyer (2018) presented eight comic styles¹ as specific qualities of humor. The aim of the present study is to compare the four humor styles and the eight comic styles empirically to test whether they constitute 12 separable styles or whether there are overlaps. Thus, this study contributes to the important endeavor of comprehensively delineating the range of lower-level individual differences in humor.

1.1 Humor Styles

Martin et al. (2003) introduced four humor styles as everyday functions of humor relevant for psycho-social well-being, which were derived from a literature review on humor and well-being. Their conceptualization distinguishes two functions, namely enhancing oneself and enhancing relationships with others, which can be achieved adaptively (affiliative and self-enhancing) or maladaptively (aggressive and self-defeating). They also described the similarities of the affiliative, self-enhancing, and aggressive humor styles with theoretical accounts of humor, including social functions of humor, humor as a mature defense mechanism, and disparagement humor, respectively.

Martin et al. (2003) developed the *Humor Style Questionnaire* (HSQ), a self-report questionnaire to assess the four humor styles. In their initial studies, they found the HSQ to be

¹ The term “comic” stems from a terminological system in which “comic” and not “humor” is used as an umbrella term for everything funny. In this terminology, “humor” is used instead to denote the lower-level style of “benevolent humor”.

reliable and valid in terms of the four-factor structure, concurrent criteria (e.g., psychosocial well-being), and self-other agreement. Based on these promising findings, Martin et al. (2003) encouraged further research on the construct validity of the HSQ and on the causality between the humor styles and well-being. Regarding the scope of the HSQ, Martin et al. (2003) proposed that the HSQ is not meant to be comprehensive for individual differences in humor, “but rather it focuses on the interpersonal and intrapsychic functions that humor is made to serve by individuals in their everyday lives, and particularly those functions that are considered most relevant to psychosocial well-being” (p. 51.)

Since then, the HSQ has been widely used in hundreds of studies, and its reliability and factorial validity was supported for the original English version and for more than 30 translations (see Martin, 2015). In line with the scope of the HSQ, most studies explored its nomological network with personality, psychopathology, and well-being. For example, two meta-analyses summarized the relationships of the HSQ with the Big Five personality traits (Mendiburo Seguel, Páez, & Martínez-Sánchez, 2015) and well-being (Schneider, Voracek, & Tran, 2018). In general, these studies supported the conceptual notion and initial findings that the affiliative and self-enhancing styles are adaptive and the aggressive and self-defeating styles maladaptive. Ford et al. (2017) investigated the self-enhancing and self-defeating styles in an experimental design to explore the causality underlying these relationships. They found that engaging in the self-enhancing style reduced anxiety, while engaging in the self-defeating style had no effect. Also, recent studies investigated the construct validity of the HSQ in more detail, mostly supporting the convergent validity of the HSQ scales (such as self-other agreement), except for the self-defeating scale (e.g., Heintz, 2017a; Ruch & Heintz, 2013, 2017).

Furthermore, several studies investigated the relationships of the HSQ scales with other humor constructs. Martin et al. (2003) found large relationships of the affiliative and self-enhancing styles with other humor measures, while the aggressive and self-defeating

styles showed smaller overlaps. In later studies, the aggressive and self-defeating styles related to mockery-related forms of humor, such as earthy, mean-spirited, and rude humor (Kuiper, Grimshaw, Leite, & Kirsh, 2004; Ruch & Heintz, 2016). Two studies (Edwards & Martin, 2010; Greengross, Martin, & Miller, 2012) related the HSQ to behavior measures (cartoon-caption tasks) in student samples and found small to medium positive correlations of the HSQ scales with humor production quality. Furthermore, all styles except for self-defeating positively predicted the frequency with which participants engaged in everyday humor behaviors (Heintz, 2017b).

1.2 Comic Styles

Recently, Ruch, Heintz et al. (2018) proposed eight comic styles, namely fun, (benevolent) humor, nonsense, wit, irony, satire, sarcasm, and cynicism. Originally describing differences among literary works, these eight styles were translated into lower-level constructs that allow a fine-grained description of individual differences in displaying humor. Specifically, this “allows speaking of ‘using’ a humor style, as these represent smaller units that can be enacted, trained, and modified more easily.” (Ruch, Heintz et al., 2018, p. 1). These eight comic styles range from lighter (e.g., fun, benevolent humor) to darker styles (e.g., sarcasm, cynicism) and from more sophisticated (e.g., wit, nonsense) to simpler styles (e.g., fun, sarcasm). These cognitive and affective dimensions are also consistent with prevalent theories in the psychological humor literature, such as incongruity/incongruity-resolution theories of humor and disparagement humor theories.

An initial assessment instrument for the eight comic styles, the *Comic Style Markers* (CSM; Ruch, Heintz et al., 2018), was found to be reliable and construct-valid (self-other agreement and factor structure). Its criterion validity was supported by differential correlations with basic personality traits (Big Five), character strengths, and intelligence. Two further studies extended the nomological network of the CSM, including Eysenck’s PEN model, subjective well-being, and mindfulness (Hofmann, Heintz, Pang, & Ruch, in press;

Ruch, Wagner, & Heintz, 2018). Additionally, the CSM scales showed expected relationships with other humor measures (Heintz, 2018), including self-reported cheerfulness (fun, benevolent humor, nonsense, wit, irony, and satire), lower aversiveness towards humorous stimuli (nonsense, irony, satire, sarcasm, and cynicism), creating more punchlines in a cartoon punchline production test (fun, benevolent humor, nonsense, and wit), and a higher quality of the generated punchlines (nonsense and wit). Effect sizes were small to large for the self-reports and small to medium for the behavior measures of humor appreciation and creation.

1.3 Relations between Humor Styles and Comic Styles

Conceptual differences between the humor and comic styles lie in the derivation of the constructs (novel concepts synthesized from a literature review vs. literary concepts translated into psychology), the degree of abstraction (with the humor styles being more abstract than the comic styles), and the scope (well-being-related functions of humor vs. individual differences in displaying humor). In “ABCD” terms (Revelle, 2008), the humor styles mostly cover affect (well-being-related) and desire (functions), while the comic styles comprise all four elements (affect, behavior, cognition, and desire.) Similarities exist between fun and affiliative, which share cheerful humor production in group settings, benevolent and self-enhancing, which share a serene and humorous outlook on life, and sarcasm and aggressive, which share criticizing and mocking others.

Empirically, the humor and comic styles were compared in one study (Ruch & Heintz, 2016) using the HSQ and one-item ratings of the eight comic styles. They found the strongest positive correlations between fun and affiliative, between benevolent and self-enhancing, and between sarcasm and aggressive. Furthermore, wit, satire, and cynicism showed medium-sized positive correlations with aggressive humor. The self-defeating style displayed small correlations with wit, sarcasm, and cynicism. These results should be considered preliminary, given the limited reliability and untested validity of the one-item ratings. Still, they are in line with the conceptual similarities and suggest that potentially 3 of the 12 styles overlap, which

would result in nine distinguishable styles (fun/affiliative, benevolent/self-enhancing, sarcasm/aggressive, nonsense, wit, irony, satire, cynicism, and self-defeating). The present study is the first that employs the two standard measures of humor and comic styles, the HSQ and the CSM, to more adequately determine how many styles can be distinguished.

2 Material and Methods

2.1 Sample

The sample consists of participants from two larger surveys.² Of the 778 participants who started the survey, 570 (73.3%) completed the HSQ and the CSM and were included in the analyses. Participants' median age was 23 years ($M=27.43$, $SD=10.79$, range 18–75 years), and more women (69.8%) than men (30.2%) participated. Participants were mostly Swiss (70.7%) or German (20.9%). Most of them were university students (50.2%), followed by university graduates (23.2%) and high-school graduates (19.8%).

2.2 Measures

The *Humor Styles Questionnaire* (HSQ; Martin et al., 2003; German version by Ruch & Heintz, 2016) comprises 32 items, eight for each of the humor styles affiliative (sample item: “I enjoy making people laugh”), self-enhancing (“If I am feeling sad or upset, I usually lose my sense of humor”), aggressive (“If I don't like someone, I often use humor or teasing to put them down”), and self-defeating (“I let people laugh at me or make fun at my expense more than I should”).

The *Comic Style Markers* (CSM; Ruch, Heintz et al., 2018) consists of 48 items, six for each of the comic styles fun (“I am a funny joker”), benevolent humor (“When my humor is aimed at human weaknesses, I include both myself and others”), nonsense (“I like nonsensical humor”), wit (“My wit and astute mind help me to be quick witted”), irony (“Whoever understands my irony is, along with me, superior to those who don't understand

² The participants partly overlap with the samples from Heintz (2017a, 2017b), Ruch, Heintz et al. (2018, Study 1, Samples 3+4), and Ruch and Heintz (2017, Study 2). Importantly, these studies had different research questions than the present study.

it”), satire (“I like to ridicule moral badness to induce or increase a critical attitude in other people.”), sarcasm (“Biting mockery suits me”), and cynicism (“I tend to show no reverence for certain moral concepts and ideals, but only scorn and derision”).

The response scale in both questionnaires ranges from *totally disagree* (1) to *totally agree* (7). Cronbach’s alpha was sufficient for all scales (see Table 1) and comparable for the HSQ ($Mdn=.85$) and the CSM scales ($Mdn=.83$).

2.3 Procedure

Participation criteria were an age of at least 18 years and a good command of German. The surveys were conducted online (www.unipark.info) and in line with the local ethical guidelines. Other measures were included that are not relevant for the present study.

2.4 Analyses

Correlations, partial correlations (controlling for gender and age), and stepwise regressions were computed, in which gender and age were added in step 1, and either the CSM or the HSQ in step 2,³ Additionally, the average variance explained (AVE; Fornell & Larcker, 1981) was computed using structural equation models (maximum-likelihood estimator) with the *lavaan* package (Rosseel, 2012) in *R* (R Development Core Team, 2018). The AVE is the average of the squared standardized loadings of each item on the latent factor. Factors can be considered redundant (or lacking discriminant validity) if the squared latent correlation between the factors (i.e., their shared variance) is as large as or larger than the AVE of the factor (i.e., the mean variance accounted for by the items.)

Effect sizes are interpreted in line with Cohen’s (1992) guidelines, classifying correlations of $\geq .10$ as small, $\geq .30$ as medium, and $\geq .50$ as large. For the squared multiple correlations, $\geq .02$ is classified as small, $\geq .13$ as medium, and $\geq .26$ as large. The sample size

³ The same conclusions were reached when the regressions were computed without the control variables.

was sufficient to detect small effects ($r \geq .12$ and $R^2 \geq .04$) with a power of 80% (with $p < .05$, two-tailed)

3 Results

3.1 Relationships Between the HSQ and CSM Scales

Table 1 shows the correlations and partial correlations (controlling for gender and age) between the HSQ and CSM scales. Large correlations were found between affiliative and fun and wit, between self-enhancing and benevolent, and between aggressive and sarcasm. Medium-sized positive correlations were found between affiliative and benevolent and nonsense, between self-enhancing and fun, nonsense, and wit, between aggressive and irony and cynicism, and between self-defeating and satire.

Table 1

Means, Standard Deviations, Cronbach's Alpha, Correlations, and Partial Correlations Between the Scales of the Humor Styles Questionnaire (HSQ) and the Comic Style Markers (CSM)

	HSQ				CSM							
	AF	SE	AG	SD	Fun	Ben.	Non.	Wit	Irony	Satire	Sarc.	Cyn.
HSQ												
Affiliative (AF)	.87	.42***	.16***	.06	.64***	.39***	.32***	.58***	.19***	.21***	.08	-.02
Self-enhancing (SE)	.40***	.86	.05	.16***	.38***	.63***	.34***	.36***	.10*	.25***	-.01	-.05
Aggressive (AG)	.16***	.03	.69	.11**	.25***	.02	.15***	.15***	.34***	.22***	.53***	.32***
Self-defeating (SD)	.06	.16***	.11*	.83	.19***	.14***	.11*	.08	.23***	.33***	.17***	.20***
CSM												
Fun	.64***	.36***	.27***	.19***	.82	.39***	.45***	.47***	.31***	.27***	.20***	.11**
Benevolent humor (Ben.)	.36***	.64***	.00	.14***	.36***	.73	.35***	.44***	.18***	.39***	.05	.05
Nonsense (Non.)	.31***	.33***	.18***	.11*	.45***	.35***	.86	.26***	.21***	.17***	.19***	.23***
Wit	.54***	.36***	.15***	.07	.45***	.45***	.27***	.86	.37***	.38***	.25***	.16***
Irony	.20***	.08	.38***	.22***	.33***	.15***	.22***	.35***	.79	.46***	.49***	.44***
Satire	.20***	.24***	.25***	.32***	.28***	.39***	.20***	.39***	.46***	.79	.44***	.47***
Sarcasm (Sarc.)	.09*	-.02	.56***	.17***	.23***	.03	.21***	.24***	.51***	.45***	.84	.65***
Cynicism (Cyn.)	-.02	-.06	.38***	.20***	.13**	.05	.26***	.17***	.46***	.50***	.67***	.88
Gender	.05	-.02	-.20***	.00	-.06	-.08*	-.16***	-.13**	-.09*	-.22***	-.16***	-.27***
Age	-.12**	.12**	-.16***	-.02	-.12**	.16***	-.01	.13**	-.17***	.01	-.15***	-.09*
<i>M</i>	5.34	4.49	3.50	3.23	4.43	5.05	4.84	4.74	4.42	4.06	3.71	3.91
<i>SD</i>	0.98	1.06	0.86	1.03	1.12	0.85	1.16	1.06	1.07	1.05	1.26	1.34

Notes. $N=569-570$. Zero-order correlations below the diagonal, partial correlations (controlling for gender and age) above the diagonal. Gender coded with 1=male, 2=female. Cronbach's alpha in italics in the diagonal.

*** $p<.001$. ** $p<.01$. * $p<.05$.

To test the unique association between humor and comic styles, stepwise regressions were conducted, in which gender and age were entered in Step 1 and the HSQ or CSM in Step 2 (see Tables 2 and 3). Significant predictors for affiliative were fun, wit, and cynicism (negatively). For self-enhancing, significant predictors were benevolent humor, cynicism (negatively), nonsense, and fun. For aggressive, significant predictors were sarcasm, fun, and irony. Lastly, for self-defeating, significant predictors were satire, fun, and wit (negatively). Thus, three to four CSM scales uniquely accounted for the variance in the HSQ ($Mdn=36.5\%$) with large effects for all HSQ scales (29–53%) except for self-defeating (14%).

Table 2
Stepwise Regressions (Standardized Regression Weights) Predicting the Humor Styles Questionnaire

Predictors	Humor Styles Questionnaire			
	Affiliative	Self-enhancing	Aggressive	Self-defeating
Step 1: Demographics				
Gender	.03	.00	-.23***	.00
Age	-.11**	.12**	-.20***	-.03
ΔR^2	.01*	.02*	.08***	.00
Step 2: Comic Style Markers				
Gender	.07*	.04	-.14***	.09*
Age	-.13***	.03	-.06	.03
Fun	.47***	.11**	.17***	.15**
Benevolent humor	.06	.52***	-.05	.03
Nonsense	.03	.12**	.00	.00
Wit	.37***	.06	-.05	-.15**
Irony	-.05	-.03	.10*	.09
Satire	-.01	.06	-.04	.28***
Sarcasm	-.03	-.02	.50***	-.02
Cynicism	-.10*	-.13**	-.04	.05
ΔR^2	.53***	.44***	.29***	.14***
Total R^2	.54***	.46***	.37***	.14***
Total R	.74***	.67***	.61***	.37***

Notes. $N=569$. Gender coded with 1=male, 2=female.

*** $p<.001$. ** $p<.01$. * $p<.05$.

Regarding the CSM scales, benevolent humor, nonsense, and wit were significantly predicted by affiliative and self-enhancing, and irony, sarcasm, and cynicism were predicted

by aggressive and self-defeating. Fun and satire were significantly predicted by all HSQ scales. Additionally, aggressive and affiliative accounted for a significant amount of variance in nonsense and irony, respectively. Overall, the HSQ accounted for a large amount of unique variance (28–46%) in fun, benevolent humor, wit, and sarcasm and a medium-sized amount (13–17%) in the other CSM scales ($Mdn=31.0\%$).

Table 3
Stepwise Regressions (Standardized Regression Weights) Predicting the Comic Style Markers

Scales	Comic Style Markers							
	Fun	Ben.	Non.	Wit	Irony	Satire	Sarc.	Cyn.
Step 1: Demographics								
Gender	-.07	-.07	-.17***	-.11**	-.11**	-.23***	-.18***	-.29***
Age	-.13**	.16***	-.04	.11**	-.19***	-.03	-.18***	-.13**
ΔR^2	.02**	.03***	.03***	.03***	.04***	.05***	.06***	.09***
Step 2: HSQ								
Gender	-.06	-.08*	-.15***	-.11**	-.05	-.20***	-.06	-.22***
Age	-.05	.10**	-.02	.16***	-.11**	.01	-.07	-.07
Affiliative	.57***	.16***	.20***	.51***	.13**	.10*	.02	-.04
Self-enhancing	.11**	.56***	.24***	.13***	.00	.15***	-.06	-.08
Aggressive	.14***	-.05	.10*	.06	.31***	.16***	.53***	.31***
Self-defeating	.12***	.05	.05	.02	.18***	.27***	.12**	.17***
ΔR^2	.46***	.41***	.16***	.34***	.16***	.17***	.28***	.13***
Total R^2	.48***	.44***	.19***	.37***	.21***	.23***	.34***	.22***
Total R	.69***	.66***	.44***	.61***	.45***	.48***	.58***	.47***

Notes. $N=569$. HSQ= Humor Styles Questionnaire, Ben.=benevolent humor, Non.=nonsense, Sarc.=sarcasm, Cyn.=cynicism. Gender coded with 1=male, 2=female.

*** $p<.001$. ** $p<.01$. * $p<.05$.

3.2 Redundancies Between the HSQ and CSM Scales

Given these medium-sized to large overlaps between the HSQ and CSM scales, it is next investigated whether any of scales are redundant by comparing the AVE to the squared correlations among the scales (see Table 4). In three instances, the squared correlations among the scales (i.e., their shared variance) were as large as or larger than the corresponding AVE, indicating a lack of discriminant validity. Specifically, affiliative and fun, self-enhancing and benevolent, and aggressive and sarcasm could not be distinguished from each

other. Thus, three of the four HSQ scales and three of the eight CSM were redundant. The self-defeating scale could not be located in the CSM, though the largest shared variance was found with satire.

Table 4
Average Variance Explained (AVE) and Squared Latent Correlations among the Scales of the Humor Styles Questionnaire and the Comic Style Markers

Comic Style Markers	AVE	Humor Styles Questionnaire			
		Affiliative	Self-enhancing	Aggressive	Self-defeating
AVE		.46	.44	.25	.41
Fun	.44	.66	.16	.08	.04
Benevolent humor	.32	.21	.63	.01	.02
Nonsense	.52	.14	.11	.02	.01
Wit	.51	.43	.14	.01	.00
Irony	.39	.05	.00	.22	.05
Satire	.39	.05	.06	.08	.13
Sarcasm	.48	.01	.00	.48	.03
Cynicism	.56	.00	.01	.19	.03

Notes. $N=570$.

4 Discussion

The aim of the present study was to compare the four humor styles and the eight comic styles empirically to test whether they constitute 12 separable styles or whether there are redundancies among them. The overlaps among the HSQ and CSM scales were large for all scales except for self-defeating as well as nonsense, irony, satire, and cynicism. Additionally, redundancies were found between affiliative, self-enhancing, and aggressive, and fun, benevolent humor, and sarcasm, respectively. Thus, they seem to capture similar individual differences in humor. Overall, these findings replicate and extend—by using the CSM instead of one-item ratings—the previous preliminary study (Ruch & Heintz, 2016) and suggest that 3 of the 12 styles overlap, resulting in nine distinguishable styles (fun/affiliative, benevolent humor/self-enhancing, sarcasm/aggressive, nonsense, wit, irony, satire, cynicism, and self-defeating).

These findings do not imply that these constructs are conceptually interchangeable; for example, benevolent humor includes a warm-hearted attitude and self-enhancing instead a coping component. Still, they could not be empirically distinguished if assessed with the HSQ and the CSM. This corroborates that cheerful humor production (similar to fun and affiliative), a cheerful mood (similar to benevolent and self-enhancing), and mockery (similar to sarcasm and aggressive) are central individual differences in humor that need to be considered in a comprehensive approach.

The lower overlap with the self-defeating scale is in line with the findings that this HSQ scale captured humor insufficiently, thus limiting its overlap with other humor measures (Heintz, 2017b; Ruch & Heintz, 2013, 2017). The lower overlap with five of the CSM scales might be explained by the humor styles being clearly adaptive and maladaptive (in line with their conceptualization of well-being-related functions of humor; Martin et al., 2003), while the five comic styles are not clearly light or dark or mix both aspects. For example, irony allows complimenting by criticizing or criticizing by complimenting, and satire has a moral component, aiming to improve wrongdoings by criticizing them. The five comic styles are also sophisticated, which is not conceptualized in the humor styles: Nonsense entails playing with ideas and words, wit entails spontaneous and clever comments, irony entails saying the opposite of what is meant, and satire and cynicism both entail expressing criticism due to moral violations. Of course, it is to be expected that the more narrow humor styles (which focus on affect and desire) cannot cover the more comprehensive list of comic styles (which focus on all ABCD elements.)

4.1 Future directions

The present findings suggest several future directions for research and applications of individual differences in humor. First, the relevance of the five comic styles that did not converge with the humor styles should be investigated in more detail. For example, it should be tested whether they can account for incremental variance in relevant variables (e.g., well-

being, emotional intelligence, creativity, and virtues) beyond basic personality traits and the three central humor-related styles. Along these lines, Ruch, Wagner et al. (2018) showed that wit accounted for unique variance in trait positive affect, and irony and cynicism accounted for unique variance in life satisfaction beyond the PEN traits, the lie scale, and the remaining comic styles. Second, behavior genetic studies should be employed to test the extent to which the comic styles are influenced by genetic and shared and non-shared environmental factors, as was already done for the HSQ (e.g., Vernon, Martin, Schermer, Cherkas, & Spector, 2008).

Third, the HSQ and the CSM both need to be advanced and developed further. For the HSQ, more investigations of its content and construct validity are needed, and the self-defeating scale needs to be revised to align it with the construct that should be measured (see Ruch & Heintz, 2017). The CSM is not considered to be a final measure, but it rather represents one step in an ongoing endeavor to comprehensively assess individual differences in humor (Ruch, Heintz et al., 2018). Thus, assessing the comic styles in more detail (e.g., by delineating facets or concrete behaviors associated with the styles) and analyzing the comic styles in different cultures would further elucidate their generalizability and diversity. Furthermore, convergent validity should be established with actual humor behaviors. Thus far, the comic style nonsense was found to relate to higher appreciation of nonsense humor, and wit was associated with the quantity and quality of punchline productions (Heintz, 2018). Extending these investigations to all nine styles is an important task for future research.

Fourth, comparing additional styles (either novel or existing ones) with the nine styles allows determining whether they expand the list or whether they are redundant; for example, laughing at oneself, gelotophilia (the joy of being laughed at), and self-disparaging humor could be compared to the self-defeating humor style, and katagelasticism (the joy of laughing at others), dark humor, and grotesque humor could be compared to sarcasm. To arrive at a comprehensive list of comic styles and eventually a model of individual differences in humor,

established methods in personality research such as psycholexical or act frequency approaches (see Craik et al., 1996) should to be employed.

Fifth, both the HSQ and the CSM have the potential to explore how humor can influence well-being. While a range of humor trainings and interventions was developed (for an overview, see Ruch & Hofmann, 2017), they usually do not distinguish among different styles. Investigating the humor and comic styles in experimental designs would be an important step forward in determining which styles enhance well-being and reduce psychopathology (see Ford et al., 2017). The CSM might be particularly suitable for such investigations, as it captures lower-level constructs closer to humor behaviors, which can be more easily modified and trained than more abstract constructs.

4.3 Limitations

The present study has several shortcomings. First, the sample was not representative of the general population in German-speaking countries. Second, the extent to which the present findings can be generalized to other cultures and languages might be limited, and thus replications are needed. Third, the findings are all based on self-reports, which might have artificially increased the correlations among the scales due to common method variance. Future studies should thus take a multimethod approach, including behavior measures of humor.

4.4 Conclusions

The present study adds to the literature on individual differences in humor by determining the number of unique styles as assessed by the HSQ and the CSM. Overall, nine styles could be distinguished from one another, of which three styles (representing cheerful humor production, a cheerful mood, and mockery) were shared by the two measures. The added value of the six additional styles in psychological research and applications remains to be explored. Furthermore, longitudinal and experimental studies are needed to test how different styles of humor influence relevant outcomes (such as psychosocial well-being).

Overall, it is hoped that psychological humor research keeps its momentum and continues to gain new insights, eventually resulting in a comprehensive description and ideally a sustainable model of individual differences in humor.

5 References

- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155–159.
<https://doi.org/10.1037/0033-2909.112.1.155>
- Craik, K.H., Lampert, M.D., & Nelson, A.J. (1996). Sense of humor and styles of everyday humorous conduct. *HUMOR*, 9, 273–302. <https://doi.org/10.1515/humr.1996.9.3-4.273>
- Edwards, K.R., & Martin, R.A. (2010). Humor creation ability and mental health: are funny people more psychologically healthy? *Europe's Journal of Psychology*, 6, 196–212.
<https://doi.org/10.5964/ejop.v6i3.213>
- Ford, T.E., Lappi, S.K., O'Connor, E.C., & Banos, N.C. (2017). Manipulating humor styles: Engaging in self-enhancing humor reduces state anxiety. *HUMOR*, 30, 169–192.
<https://doi.org/10.1515/humor-2016-0113>
- Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18, 39–50.
<https://doi.org/10.2307/3151312>
- Greengross, G., Martin, R.A., & Miller, G. (2012). Personality traits, intelligence, humor styles, and humor production ability of professional stand-up comedians compared to college students. *Psychology of Aesthetics, Creativity, and the Arts*, 6, 74–82.
<https://doi.org/10.1037/a0025774>
- Heintz, S. (2017a). Do others judge my humor style as I do? Self-other agreement and construct validity of the Humor Styles Questionnaire. *European Journal of Psychological Assessment*. Advance online publication. <https://doi.org/10.1027/1015-5759/a000440>
- Heintz, S. (2017b). Putting a spotlight on daily humor behaviors: Dimensionality and relationships with personality, subjective well-being, and humor styles. *Personality and Individual Differences*, 104, 407–412. <https://doi.org/10.1016/j.paid.2016.08.042>

- Heintz, S. (2018). *Locating eight comic styles in basic and broad concepts of humor: Findings from self-reports and behavior tests*. Manuscript under review.
- Hofmann, J., Heintz, S., Pang, D., & Ruch, W. (in press). Differential relationships of light and darker forms of humor with mindfulness. *Applied Research in Quality of Life*.
- Kuiper, N.A., Grimshaw, M., Leite, C., & Kirsh, G. (2004). Humor is not always the best medicine: Specific components of sense of humor and psychological well-being. *HUMOR*, 17, 135–168. <https://doi.org/10.1515/humr.2004.002>
- Martin, R.A. (2015). On the challenges of measuring humor styles: Response to Heintz and Ruch. *HUMOR*, 28, 635–639. <https://doi.org/10.1515/humor-2015-0096>
- Martin, R.A., Puhlik-Doris, P., Larsen, G., Gray, J., & Weir, K. (2003). Individual differences in uses of humor and their relation to psychological well-being: Development of the Humor Styles Questionnaire. *Journal of Research in Personality*, 37, 48-75. [https://doi.org/10.1016/S0092-6566\(02\)00534-2](https://doi.org/10.1016/S0092-6566(02)00534-2)
- Mendiburo-Seguel, A., Páez, D., & Martínez-Sánchez, F. (2015). Humor styles and personality: A meta-analysis of the relation between humor styles and the Big Five personality traits. *Scandinavian Journal of Psychology*, 56, 335–340. <https://doi.org/10.1111/sjop.12209>
- R Development Core Team (2018). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. Retrieved from <http://www.R-project.org/>
- Revelle, W. (2008). The contribution of reinforcement sensitivity theory to personality theory. In P.J. Corr (Ed.), *The reinforcement sensitivity theory* (pp. 508–527). Cambridge, UK: Cambridge University Press.
- Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48, 1–36. <https://doi.org/10.18637/jss.v048.i02>

- Ruch, W., & Heintz, S. (2013). Humour styles, personality and psychological well-being: What's humour got to do with it? *European Journal of Humour Research*, 1, 1-24.
<https://doi.org/10.7592/EJHR2013.1.4.ruch>
- Ruch, W., & Heintz, S. (2016). The German version of the Humor Styles Questionnaire: Psychometric properties and overlap with other styles of humor. *Europe's Journal of Psychology*, 12, 434–455. <https://doi.org/10.5964/ejop.v12i3.1116>
- Ruch, W., & Heintz, S. (2017). Experimentally manipulating items informs on the (limited) construct and criterion validity of the Humor Styles Questionnaire. *Frontiers in Psychology*, 8: 616. <https://doi.org/10.3389/fpsyg.2017.00616>
- Ruch, W., Heintz, S., Platt, T., Wagner, L., & Proyer, R.T. (2018). Broadening humor: Comic styles differentially tap into temperament, character, and ability. *Frontiers in Psychology*, 9: 6. <https://doi.org/10.3389/fpsyg.2018.00006>
- Ruch, W., & Hofmann, J. (2017). Fostering humor. In C. Proctor (Ed.), *Positive psychology interventions in practice* (pp. 65–80). New York, NY: Springer.
- Ruch, W., Wagner, L., & Heintz, S. (2018). Humor, the PEN model of personality, and subjective well-being: Support for differential relationships with eight comic styles. *Rivista Italiana di Studi sull'Umore*, 1(1), 31–43. Retrieved from www.risu.biz/wp-content/uploads/2018/01/Ruch_et_al.-RISU-11-2018-31-44-1.pdf
- Schneider, M., Voracek, M., & Tran, U.S. (2018). “A joke a day keeps the doctor away?” Meta-analytical evidence of differential associations of habitual humor styles with mental health. *Scandinavian Journal of Psychology*, 59, 289–300.
<https://doi.org/10.1111/sjop.12432>
- Vernon, P.A., Martin, R.A., Schermer, J.A., Cherkas, L.F., & Spector, T.D. (2008). Genetic and environmental contributions to humor styles: A replication study. *Twin Research and Human Genetics*, 11, 44–47. <https://doi.org/10.1375/twin.11.1.44>